

Abstract

Wavelet-based denoising is provided to an image. A corrected reference image is acquired and stored. A test image is adjusted using a selected gain setting such that the mean pixel value of the adjusted test image matches the mean pixel value of the reference image. The adjusted image is decomposed into sub-bands using a wavelet transformation. Thresholding is applied to a selected sub-band with a selected threshold setting. An inverse wavelet transformation is then applied to the sub-bands to provide a denoised image. This process is repeated such that each sub-band is tested with multiple threshold settings. The denoised images are analyzed to locate a threshold setting that is approximately optimal for each sub-band. This process is repeated for multiple light settings. A gain-threshold map is constructed by mapping each selected gain setting to the approximately optimal threshold settings for each sub-band at the selected gain setting.

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